whereas in the Arizona bird the back is perfectly uniform in both old and young, they belong to different species. I therefore propose for the latter the name of *Picus arizonæ*, the diagnosis of which will be as follows:—

*P.* similis *P. stricklandi*, sed dorso uniformi nec albo-fasciato distinguendus.

*Hab.* In montibus "Santa Rita" dictis, in Arizona. Ex typ. in mus. nostr.

## XVI.—*A Review of the Species of the Genus* Cursorius.

By Henry Seebohm.

Twenty years ago the genus *Cursorius* was reviewed by Dr. Hartlaub (P. Z. S. 1866, p. 61); yet, notwithstanding the numerous collections of African birds which have since that date found their way to London and Berlin, our knowledge of the species of this interesting group had advanced but little until the visit of Mr. E. Lort Phillips to Somali-land, in the winter of 1884–85, added a new species to the list.

The Coursers form a group of about a dozen species of birds which are intermediate between the Pratincoles and the Lapwings, and probably almost as closely allied to the Bustards on the one hand and the Plovers on the other. The Lapwings and Plovers, like the Sandpipers, Snipes, and other birds belonging to the same family, have the nasal orifice placed in a groove or ditch which extends for some distance beyond it; but in *Otis*, *Cursorius*, and *Glareola* there is no nasal groove, the nasal orifice being placed in a depression not more elongated than itself. From *Otis*, *Cursorius* may be distinguished by its scutellated tarsus, and from *Glareola* by its having neither a forked tail nor a hind toe.

The Coursers are desert birds, and feed upon the insects that are found upon sandy plains. It is therefore not surprising that most of the species are confined to Africa. The range of the genus *Cursorius* extends, however, northwards into Palæarctic Africa, and eastwards through Syria, Arabia, and Persia to India and Ceylon.

It is unnecessary to repeat the synonymy of each species, which remains very much in the same condition in which it was left by Dr. Hartlaub; but the lapse of twenty years has added something to our knowledge of geographical distribution which is worth recording. I have also endeavoured, in every case, to give an absolute diagnosis of each species, without increasing the length of my paper by adding other details of description.

1. CURSORIUS SOMALENSIS, sp. nov.

I cannot agree with Capt. Shelley that the example of the Somali Courser obtained by Mr. Lort Phillips (Shelley, Ibis, 1885, p. 415) represents merely a local race of the Cream-coloured Courser *. It appears to me to be a good species, which may be diagnosed as having the *hind head slate-grey* (like *C. gallicns* and *C. rufus*), but the *axillaries* and *under wing-coverts greyish buff* (instead of nearly black). It further differs from *C. gallicus* in the following particulars:—It is a much smaller bird, the wing measuring 5·3 inches instead of from 6·0 to 6·3 inches; nevertheless it appears to have longer though more slender legs, the tarsus measuring 2·3 inches instead of from 2·1 to 2·3 inches. The colour of the back and wing-coverts is much darker. The subterminal black bands on the tail are twice as broad, and are also traceable on the centre tail-feathers. Finally, the black margins of the inner webs of the secondaries scarcely occupy a fifth part of the web instead of more than half.

The species is only known from a single example; but Mr. Lort Phillips states that it was fairly common in small flocks throughout the plateau.

2. CURSORIUS GALLICUS.

The Cream-coloured Courser has the *axillaries* and *under wing-coverts nearly black*, and the *outer web of the secondaries buff*. No other Courser fulfils both these conditions. The nearly black axillaries and under wing-coverts are found even in young in first plumage, showing the importance of the character; but the slate-grey hind head and the black belly are characters which only appear after the first moult. The buff outer webs of the secondaries are, however, found at all ages.

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* [" *Cursorius gallicus somalensis*, subsp. n.; subspecific race," are Capt. Shelley's exact words.—EDD.]

It breeds in the Canary Islands, the whole of North Africa, and in Arabia, Persia, Beluchistan, the Punjaub, Sind, and Rajputana. It does not breed north of the Trans-Caucasian steppes, but occasionally strays into Europe.

### 3. Cursorius rufus.

Burchell's Courser combines the two characters of having the *hind head slate-grey* and of having *dark brown* or *black* on the *belly*; but as neither of these characters appear in young in first plumage, it is safer to diagnose the species by the pattern of colour on the secondaries, which is constant at all ages. The middle secondary is white, with the basal two thirds of the outer web and the basal third of the inner web brown.

This species is confined to South Africa, where it is found in the Transvaal, Natal, and the Cape Colony.

### 4. Cursorius senegalensis.

Lichtenstein's Courser is the only species of the genus which has a *black belly*, but *neither white upper tail-coverts nor a slate-grey hind head*. However, as the first and last of these characters are only found in adult birds, a second diagnosis is necessary, which will also apply to the young in first plumage. This is easily found in the unique pattern of the secondaries. The white is shaped like a thin wedge, the base of which runs out at the tip, whilst the thin end splits the brown of the inner web almost into halves.

This species has an extensive range in the Ethiopian Region from Senegambia in the west to Kordofan in the east and the Cape Colony in the south.

### 5. Cursorius coromandelicus.

The Indian Courser, at the first glance, looks little more than a large form of Lichtenstein's Courser; but when carefully examined, it presents many important points of difference besides that of size. It is the only Courser that combines the two characters of *white upper tail-coverts* and *black under wing-coverts*. As both these characters are found in the young in first plumage, a second diagnosis is not necessary.

It appears to be generally distributed throughout India and Ceylon; but it is more local in the south, and does not occur in the extreme north-west.

6. Cursorius chalcopterus.

The Bronze-winged Courser is the only species in the genus which shows the metallic colours frequently found on the plumage of the Lapwings and occasionally on that of the Wattled Lapwings. The *tips of the primaries for about half an inch are bronzed with green and red.* According to Heuglin this character is also found in the young in first plumage.

This species has a wide range, from Senegambia in the west to Kordofan in the east, and to Damara Land and Natal in the south.

7. Cursorius cinctus.

Heuglin's Courser is nearest allied to Levaillant's Courser and its local races. These two species are the only Coursers which have no white on the secondaries beyond a narrow margin. In the former the secondaries are brown, but in the latter chestnut-buff. This character is probably constant at all ages. A more complicated diagnosis is:—*Upper tail-coverts white; primaries nearly uniform dark brown, without buff inner webs, or large white patches, or bronze tips.* No other Courser answers to this description.

Heuglin obtained it on the Upper Nile. I have an example in my collection procured by Andersson at Ondonga in Damara Land, and Mr. Lort Phillips found it in Somali-land.

8. Cursorius bicinctus.

9. Cursorius bicinctus bisignatus.

10. Cursorius bicinctus gracilis.

Levaillant's Courser, and the two local races, which do not appear to be more than subspecifically distinct from it, and which we may call respectively Hartlaub's Courser and Fischer's Courser, may always be recognized by the *chestnut-buff inner webs* of their *inner primaries and secondaries.* The typical form holds a position intermediate (at least in colour) between the other two. It is a resident in South Africa as far north as Damara Land and the Transvaal; but as Heuglin records an example from the White Nile (though the exact locality is doubtful) it may also occur throughout Central Africa.

Hartlaub's Courser is only a pale form of Levaillant's Courser and is also slightly smaller. The feathers of the upper parts are margined with nearly white instead of buff, and the ground-colour of the underparts shows the same difference. It inhabits Benguela, meeting the typical form in Damara Land, where intermediate forms are found.

Fischer's Courser was discovered by the traveller whose name it bears, in Massai-land in Eastern Equatorial Africa (Journ. f. Orn. 1884, p. 178), and has recently been procured a little to the north-east by Mr. Lort Phillips in Somaliland (Shelley, Ibis, 1885, p. 416). Like Hartlaub's Courser, it is slightly smaller than the typical form, but varies from it in the opposite direction. The buff shade is so dark that it approaches pale chestnut, and the white of the upper tail-coverts is suffused with buff. On the other hand, it resembles Hartlaub's Courser in having the dark shaft-lines on the throat less distinct, becoming almost obsolete on the upper throat.

### 11. CURSORIUS BITORQUATUS.

Jerdon's Courser is the only species of this genus which combines the characters of having a *plain brown mantle* and *patches of white near the tips of the first three primaries.*

It appears to have a very limited range, having only been found in that part of the Indian peninsula which lies between one hundred and three hundred miles due north of Madras.

### 12. CURSORIUS ÆGYPTIUS.

The Black-backed Courser may always be recognized by its *plain black mantle and scapulars.*

It inhabits West Africa and the valley of the Nile.

It has been placed by most writers in a genus by itself

(*Pluvianus*), probably in consequence of its frequenting the muddy banks of rivers, like the Ringed Plovers; but there seems to be no valid reason why it should not remain in the genus in which Wagler placed it. It agrees with *C. senegalensis* in having a shorter tarsus than usual, and with *C. bitorquatus* in having white bands across some of the primaries. It also agrees with the latter species in not having the claw of the middle toe pectinated; but examples of *C. senegalensis* also occasionally show no trace of this peculiarity *.

In order to show the mutual relationship between the species of this genus and also some of the more prominent differences in the adults, I have constructed a diagram which serves as a key to the species, more simple and concise, though conveying more information, than those in ordinary use:—

<table>
<tr><td rowspan="3">Hind head slate-grey</td><td></td><td><i>somalensis.</i></td><td></td><td></td><td></td></tr>
<tr><td></td><td><i>gallicus</i></td><td rowspan="4">Under wing-coverts black.</td><td></td><td></td></tr>
<tr><td rowspan="3">Black on belly</td><td><i>rufus</i></td><td></td><td></td></tr>
<tr><td></td><td><i>senegalensis</i></td><td></td><td></td></tr>
<tr><td></td><td><i>coromandelicus</i></td><td rowspan="5">Upper tail-coverts white.</td><td></td></tr>
<tr><td></td><td></td><td><i>chalcopterus</i></td><td></td><td></td></tr>
<tr><td></td><td rowspan="2">Feathers of upper part with pale margins</td><td><i>cinctus</i></td><td></td><td></td></tr>
<tr><td></td><td><i>bicinctus</i></td><td></td><td>Inner primaries chestnut-buff.</td></tr>
<tr><td></td><td rowspan="2">White patches near end of primaries</td><td><i>bitorquatus</i></td><td></td><td></td></tr>
<tr><td></td><td><i>ægyptius.</i></td><td></td><td></td><td></td></tr>
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* A recent reviewer, in 'Nature,' of Professor Newton's excellent article on Ornithology in the 'Encyclopædia Britannica,' finds fault with the learned writer on account of his unfavourable criticism of Sundevall's 'Tentamen.' If the Swedish ornithologist's treatment of the group of birds commonly called Limicolæ be a fair sample of the whole work, one can only come to the conclusion either that the anonymous reviewer was unacquainted with

It is not surprising that even such a compact interlaced genus as *Cursorius* should have had its share of ill usage at the hands of the "splitters"; but it seems to me that the only natural mode of subdivision is to regard the Coursers with a band across the breast as one group, leaving the remainder to form another group, each containing five species.

The ancestors of the latter of these groups were probably resident in the Mediterranean subregion during the last Interglacial Period. During the cold winters of the Glacial Period which followed, one party emigrated to India, and are now represented by *C. coromandelicus.* A second party emigrated to South Africa and became *C. rufus* and *C. senegalensis,* the former in the south and the latter in the west; whence, after the two species became differentiated, the latter gradually extended its range until it overlapped that of the former. The third party, instead of emigrating, adopted migratory habits, though not on a very extensive scale; and *C. somalensis* is probably the result of a small migratory party which overshot its mark and finally settled in Somaliland. The three tropical species (the two Ethiopian and the one Oriental) have probably altered least in appearance, as they have altered least in climate and habits, whilst *C. gallicus* has altered most.

Precisely in the same way the banded Coursers that have the most southerly range have altered least, whilst the only one (*C. ægyptius*) which ranges into the Palæarctic Region has altered most.

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those birds, or that he was ignorant of Sundevall's classification of them. *Cursorius ægyptius* is absolutely placed in a different family to that which contains its nearest allies. It appears in the family Charadriinæ, with the incorrect character "tarsi reticulati," whilst the other Coursers are placed in the family Otidinæ, and are correctly described as being provided with "tarsis transv. scutatis." A systematist who relies solely on external characters ought at least to describe them correctly. The verdict of posterity will probably be that Sundevall's classification of birds is a literary curiosity and nothing more.